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FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF THE SECRETARY

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of:

Revisions to Price Cap Rules for AT&T	)))	CC Docket No. 93-197

MOTION OF THE STAFF OF THE FEDERAL TRADE COMMISSION FOR LEAVE TO FILE REPLY COMMENTS OUT OF TIME

The Bureau of Economics of the Federal Trade Commission requests leave to file the attached reply comments on October 25, 1993, four days after the October 21, 1993 date established by the Commission for the filing of reply comments in the above-captioned proceeding. The grounds for this motion are:

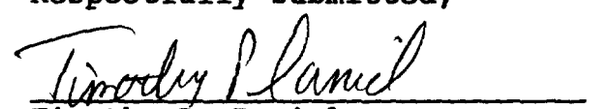
1. The reply comments report econometric findings by a member of the Bureau of Economics staff. These findings represent an attempt to measure the level of competition in long distance markets by providing estimates of the potential deadweight loss if AT&T were completely unconstrained. This is a factor that may be significant in the Commission's resolution of this proceedings.

2. Filing of the reply comments has been unavoidably delayed due to the need for additional staff review.

3. Acceptance of these reply comments will neither prejudice any party nor delay resolution of this proceeding.

For the foregoing reasons, the Bureau of Economics of the Federal Trade Commission requests that the Commission accept the reply comments.

Respectfully submitted,



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Dated: October 25, 1993

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the matter of

Revisions to Price Cap Rules for AT&T	)	**CC Docket No. 93-197**

Reply Comment of the Staff of the Bureau of Economics of the Federal Trade Commission*

October 25, 1993

*This comment represents the views of the staff of the Bureau of Economics of the Federal Trade Commission. They are not necessarily the views of the Commission or any individual Commissioner. Inquires regarding this comment should be directed to Michael R. Ward (202-326-2096) of the FTC's Bureau of Economics.

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In the matter of

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Reply Comment of the Staff of the Bureau of Economics of the Federal Trade Commission[1]

I. Introduction and Summary

The staff of the Bureau of Economics of the Federal Trade Commission (FTC) appreciates this opportunity to submit this comment in response to the Federal Communications Commission's (FCC) Notice of Proposed Rulemaking[2] ("Notice") concerning proposals to revise price cap rules for AT&T.[3] In the Notice, the FCC requests the submission of data and comment regarding 1)

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[1]This comment represents the views of the staff of the Bureau of Economics of the Federal Trade Commission. They are not necessarily the views of the Commission or any individual Commissioner. Inquires regarding this comment should be directed to Michael R. Ward (202-326-2096) of the FTC's Bureau of Economics.

[2]Notice of Proposed Rulemaking In the Matter of Revisions to Price Cap Rules for AT&T, CC Docket No. 93-197 Released July 23, 1993).

[3]This comment addresses issues relating to economic efficiency. It does not take a position on other policy considerations that may be of relevance to the FCC.

removing Optional Calling Plans (OCPs) from the price-cap regulatory framework to a more streamlined form of regulation[4]; 2) removing commercial services from the price-cap regulatory framework to a more streamlined form of regulation[5]; 3) revising AT&T's quality monitoring; and 4) revising the regulatory treatment of 800 Directory Assistance and analog private line service. This comment addresses only the first two proposed revisions. The analysis contained in this comment discusses the conditions under which consumers would benefit from adoption of proposals 1) and 2), streamlining the regulatory procedures for optional calling plans and commercial long distance services.

This comment summarizes and interprets an empirical analysis of market power in long distance communications that has been conducted by a staff member of the Bureau of Economics of the Federal Trade Commission.[6] The analysis estimates the drop in the quantity demanded that a price increase would induce for AT&T and the other long distance companies for Basket 1 services.[7] The

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[4]"ReachOut America" is AT&T's most popular optional calling plan, but AT&T has also recently introduced "the i plan." "Friends and Family" and "the Most plan" are MCI's and Sprint's more popular optional calling plans.

[5]AT&T has proposed that long distance calls made by customers who pay business or commercial local telephone service rates would be classified as commercial services.

[6]A copy of this analysis is attached to this comment.

[7]Basket 1 services include traditional long distance, calling card and international calling and are primarily purchased by residential and small business customers. Baskets 2 and 3 comprise 800 service and private lines that are primarily purchased by large businesses.

results suggest that the market for Basket 1 long distance services, thought to be less competitive than Baskets 2 and 3, is nonetheless quite competitive. Specifically, the potential welfare cost[8] due to the exercise of market power by an unregulated AT&T is estimated to be between 0.25% and 1.26% of industry revenues (i.e., between $138 million and $696 million per year). Furthermore, to the extent that competition for optional calling plan customers and commercial service customers (who are among those included in Basket 1) is more vigorous than that measured in the analysis, any potential welfare costs due to supra-competitive AT&T prices for these services would be smaller. If the FCC finds that the benefits of streamlining outweigh the potential welfare costs from a possible increase in the opportunity for AT&T to exercise market power, then streamlining would enhance total economic efficiency.

II. Expertise of the Staff of the Federal Trade Commission

The FTC is an independent administrative agency charged with maintaining competition and safeguarding the interests of consumers.[9] The staff of the FTC, upon request, often analyzes the competitive or economic efficiency implications of regulatory or legislative proposals. In the course of this work, as well as in antitrust and consumer protection research and litigation, the staff applies established principles and recent developments, both

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[8]This is discussed in section IV.

[9]15 U.S.C. §§ 41 et seq. The FTC Act declares unlawful unfair methods of competition and unfair or deceptive acts or practices.

empirical and theoretical, to competition and consumer protection issues. For example, the staff recently submitted a comment to the FCC on its proposals to modify the regulations concerning the local transport of interstate long distance traffic.[10]

The staff of the Bureau of Economics of the FTC has studied various economic aspects of the telecommunications industry. These studies include: the effects of price and entry regulations on long distance telephone service[11], the cost attributes of local telephone companies[12] and issues relating to bypass of the local telephone network by long distance companies.[13]

III. Background

As we understand it, this proceeding is designed to tailor regulation of telecommunications under the Communications Act of 1934, as ammended,[14] to an increasingly competitive long distance market. One premise of the 1984 court-ordered AT&T divestiture was

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[10]Comment of the Staff of the Bureau of Economics of the Federal Trade Commission regarding Expanded Interconnection with Local Telephone Company Facilities (CC Docket No. 91-141 Phase I and CC Docket No. 80-286) (March 5, 1993).

[11]See Alan D. Mathios and Robert P. Rogers, The Impact of State Price and Entry Regulation on Intra-State Long Distance Telephone Rates, FTC Bureau of Economics Staff Report (November 1988).

[12]Shin, Richard and John T. Ying, "Unnatural Monopolies in Local Telephones," *RAND Journal of Economics* 23 (1992) 171-183 and Ying, John T. and Richard Shin, "Costly Gains to Breaking Up: LECs and the Baby Bells," *Review of Economics and Statistics* 32 (1993) 357-361.

[13]Parsons, Steven G. and Michael R. Ward, "Telecommunications Bypass and the 'Brandon Effect,'" FTC Working Paper 199, (1993).

[14]47 U.S.C. §§ 151 et. seq.

that long distance telecommunications were potentially competitive. Effective competition was deemed to require equal access to the local telephone companies' end user connections.[15]

Equal access allowed AT&T's competitors to introduce services that were comparable to AT&T's. While AT&T's share of the revenues of the long distance market was 95% in 1982, by 1987 its market share had fallen to 80%, and it is currently about 60%.[16] By 1991, MCI's and Sprint's revenue market shares had climbed to 17% and 10% respectively, and the two next largest firms, WilTel and Cable & Wireless, had market shares of somewhat less than 1%. Since the divestiture, industry output, measured by the number of long distance calling minutes, has nearly tripled. Even though AT&T's share has declined to 60%, its output has increased by two-thirds over 1984 levels.

By the late 1980's, the FCC decided that traditional rate-of-return regulation would hinder the transition from monopoly to competition because of the difficulty in setting a "fair" rate of return, the regulatory lag between the date the rate is filed and the date it becomes effective, the imposition of administration

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[15]United States v. AT&T, 552 F. Supp. at 195-200 (D.D.C. 1982), *aff'd sub nom.* Maryland v. United States, 460 U.S. 1001 (1983). See also United States v. GTE Corp., 603 F. Supp. 730 (D.D.C. 1984) and MTS and WATS Market Structure Phase III, 100 F.C.C. 2d 860, 57 R.R.2d 1303 (1985) (FCC extended equal access obligations to non-Bell local telephone companies).

[16]Kwoka, John E., "The Effects of Divestiture, Privatization and Competition on Productivity in U.S. and U. K. Telecommunications," *Review of Industrial Organization* (1993) 49-61; and *Statistics of Communications Common Carriers*, Industry Analysis Division, FCC, 1992.

costs, and the perverse inefficiency incentives (i.e., the Averch-Johnson Effect).[17] To facilitate the transition toward full competition, the FCC adopted a price-cap regulatory framework in 1989.[18]

The price-cap regulation adopted for AT&T divided services into three "baskets" depending on the level of competition in the market for each service. "Basket 1" included direct dialed and operator assisted basic measured toll services (MTS), international services and calling card services; "Basket 2" was limited to 800 number services; and "Basket 3" contained all remaining services, principally those offered to large businesses. Each basket had its own price-cap, and sometimes a floor, that increased with inflation and decreased with a productivity factor and "exogenous" changes in costs, mainly carrier access charges.

In its Interexchange Proceeding[19], the FCC concluded that certain long distance services were sufficiently competitive that an even simpler regulatory framework was warranted. Under "streamlined" regulation, AT&T is able to change prices more

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[17]See Ghosh, Sutapa, "The Future of FCC Dominant Carrier Regulation: The Price Caps Scheme, 41 *Federal Communications Law Journal* 401 (1989).

[18]Policy and Rules Concerning Rates for Dominant Carriers (Price Caps), Final Rules, 54 Fed. Reg. 19,836 (1989).

[19]Competition in the Interstate Interexchange Marketplace, CC Docket No. 90-132, Report and Order, 6 FCC Rcd 5880 (1991), (Interexchange Order), recon., 6 FCC Rcd 7569 (1991), (Sua Sponte Reconsideration Order), further recon., 7 FCC Rcd 2677 (1992) (Further Reconsideration Order), pets. for recon. pending; see Competition in the Interstate Interexchange Marketplace, Memorandum Opinion and Order of Reconsideration, 8 FCC Rcd 2659 (1993).

quickly, prices are presumptively competitive, and reporting requirements are relaxed. In October, 1991, streamlined regulation was adopted for all of Basket 3 except analog private lines, a relatively small service with a shrinking demand. Likewise, following deployment of 800 number portability technology[20] in May 1993, streamlined regulation was adopted for all of Basket 2 except 800 Directory Assistance. The current Notice solicits comments on whether competition for two additional services, optional calling plans and commercial services, is sufficiently vigorous to warrant streamlined regulation for them as well.

IV. The Analysis of Market Power in Long Distance Services

Attached to this comment is a paper analyzing market power in long distance telecommunications that was prepared by a staff member of the Bureau of Economics of the FTC. The analysis estimates the potential welfare loss due to AT&T's exercise of market power by measuring the firm-specific own-price elasticity for AT&T and its chief competitors.[21] Economic theory maintains that the reciprocals of these elasticities, called "Lerner

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[20]800 number portability allows a customer to keep its 800 telephone number when it changes long distance companies. Since companies make investments specific to a telephone number (e.g., advertisements, printed material), switching costs arise if the number must be forfeited. See also Kaserman, David L. and John W. Mayo, "Competition for 800 Service," *Telecommunications Policy* (1991) 395-410.

[21]This elasticity represents the percentage change in the amount demanded of a firm's service that would occur if the firm increased its price by one percent and the prices of the other firms in the industry remained unchanged.

indices", equal the price markups over marginal costs for profit maximizing firms.[22]

With supra-competitive pricing, potential customers that value the service above its marginal cost but below its price choose not to buy the service even though they and the producer could benefit from the provision of such service. The difference between these customers' valuations and the additional cost of serving them is a social welfare loss. Accordingly, we calculate the loss in economic welfare due to supra-competitive pricing, or the deadweight loss, as the difference between the demand curve (measuring the customers' value) and the marginal cost for all customers not served who would be served if price equaled marginal cost.[23]

The analysis focuses on residential and small business services, i.e., those belonging in price-cap Basket 1. The long distance prices used in the estimation procedures are the rates filed at the FCC for basic interstate service. These prices do not include prices for WATS or 800 services, term or volume discounts, OCPs, or any other deviation from the basic rates.[24] The long

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[22]Landes, William M. and Richard A. Posner, "Market Power in Antitrust Cases," *Harvard Law Review* 94 (1981) 937-983.

[23]Some customers purchase the service despite its supra-competitive price. On economic efficiency grounds, the price-cost difference for these customers represents a transfer from consumers to producers and not a social welfare loss.

[24]Since price data were not available for AT&T's competitors other than MCI and Sprint, demand elasticities may by biased toward zero, causing inflated price-cost margins. See the attached paper, page 25.

distance quantities are carrier common line minutes. These quantities are primarily purchased at basic rates but can also include some 800 and optional calling plan purchases. They exclude large business services which use private lines or bypass facilities.

The conclusions from the analysis about market power are as follows. The lower-bound estimate of AT&T's own-price elasticity is -2.9, implying an AT&T upper-bound Lerner index of 0.337. For reasons discussed in the paper[25], the estimated elasticity is likely to be a short-run elasticity. Since long-run demand is more elastic, the estimated Lerner index overstates the long-run price-cost markup. When estimates of the Lerner index bias due to the use of short-run, rather than long-run, demand elasticities are accounted for, AT&T's price markup over long-run marginal costs is, at most, 18.6% of price. At this upper-bound value, the deadweight loss from supra-competitive pricing for the 1988 to 1991 time period was less than 1.26% of total industry revenues ($696 million per year). Similarly, a lower-bound deadweight loss estimate of 0.25% of total industry revenue ($138 million per year) was also calculated. The upper-bound estimate is likely to overstate the actual welfare loss. For example, accounting for AT&T's fall in market share since the 1988 to 1991 period from 67% to 60% decreases the upper-bound deadweight loss estimate to 0.71% of revenues.[26]

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[25]See the attached paper, pages 20-21.

[26]See the attached paper, page 33.

V. Implications of the Analysis for the Streamlining of Optional Calling Plans and Commercial Services

On economic efficiency grounds, the adoption of a more deregulatory framework is warranted if the social benefits of such a change outweigh its social costs. The costs of adopting streamlined regulation emanate from the increased opportunity for AT&T to set prices above marginal costs. It is possible that price-cap regulation is constraining AT&T's prices from the profit maximizing level more than streamlined regulation would constrain them. The difference between the deadweight losses under these two scenarios represents the economic efficiency loss due to the change in regulatory framework.[27] For example, if price-cap regulation perfectly constrains AT&T's prices to marginal cost and streamlined regulation has no constraining effect at all, then the entire potential deadweight loss discussed in the previous section represents the loss in economic efficiency. In practice, the difference between the deadweight losses under the two regulatory frameworks is likely to be less because streamlined regulation will likely retain some constraining influence and because price-caps likely do not perfectly constrain prices to marginal costs.

The potential deadweight loss calculations in the attached analysis pertain to an aggregation of many different services, including optional calling plans and commercial services. To the extent that these specific services face more competition than the

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[27]As explained in footnote 23, above, the economic efficiency loss does not include a potential transfer from producers to consumers. Such a transfer does not represent a loss to society as a whole.

average service, their price-cost margins will be smaller than the average price-cost margin. Accordingly, the potential welfare loss due to supra-competitive pricing will be proportionately lower for such services.

Competition in optional calling plans and commercial services is likely to be more vigorous than for the average service included in the analysis. Optional calling plans tend to offer discounts to high volume callers. Since these customers tend to have larger monthly bills, they have more to gain from searching for lower prices. Thus, for optional calling plan customers, demand for long distance service is likely to be more elastic. For commercial service customers, AT&T reports a relatively high customer turnover rate of 13%.[28] This is evidence that its customers can switch to lower priced (or higher quality) alternatives. More elastic demand for these services means that the potential deadweight loss as a percentage of the relevant revenues is smaller than the estimated 0.25% to 1.26%.

The benefits of adopting a streamlined regulatory framework stem from the removal of regulatory costs imposed by price-cap regulation that are not incurred under streamlined regulation. Just as streamlining Baskets 2 and 3 eliminated specific sources of social costs, so could deregulation of AT&T's Basket 1 services. First, direct administration costs incurred by the FCC and AT&T would be saved, as well as the costs incurred by AT&T and its competitors in advocating changes in the rules. Not only does the

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[28]Notice, para. 6.

FCC devote fewer resources to the regulation of Baskets 2 and 3, but AT&T and its competitors may also incur fewer costs due to the submission of requests, waivers, opposition comments, and studies. Second, with increased pricing flexibility, AT&T would be better able to respond to differences in cost conditions across customers. For example, term contracts for the private line services allow AT&T to reduce costs by making investments specific to a customer. Likewise, pricing flexibility allows 800 service prices to reflect marginal costs, which decrease with customers' calling volume. Third, with streamlined regulation, AT&T's costs of introducing new services would fall and more product variety would likely ensue. As the pace of introduction of new electronic technologies increases, their adoption becomes increasingly tied to the telecommunications companies' ability to accommodate them. If these cost savings are greater than the welfare cost due to supra-competitive pricing, then streamlining would be warranted.

The benefits from streamlining services for business customers that the FCC recognized in the Interexchange Order could also result from streamlining Basket 1. These included: the expedition of "new services and price reductions"; an increase in AT&T's ability "to react to market conditions and customer demands" with more flexible pricing; a decrease in "regulatory delay and uncertainty"; an increase in competitive pressure on AT&T's competitors; and an increase in "AT&T's incentives to initiate pro-consumer price and service changes."[29]

[29]Interexchange Order, para. 78-80.

VI. Conclusion

This comment reviews an analysis conducted by a member of the staff of the Federal Trade Commission that attempts to measure the level of competition in long distance markets. The results of this analysis provide estimates of the potential deadweight loss if AT&T were completely unconstrained. The social costs of adopting a streamlined regulatory framework are then shown to be the difference in the actual deadweight losses resulting from price-caps and streamlined regulation. If the social benefits from the elimination of price-cap regulation exceed these social costs, then adoption of a streamlined regulatory framework would enhance economic efficiency.

Market Power in Long Distance Telecommunications*

Michael R. Ward

Economist, Federal Trade Commission

September 16, 1993

ABSTRACT: AT&T's long distance prices are regulated in order to avoid supra-competitive pricing. This rationale presumes that AT&T possesses sufficient market power to raise prices substantially above marginal cost. This paper estimates firm specific demand elasticities for AT&T and the other large long distance companies using monthly data for 1988 through 1991 from five states. Lerner indices are calculated from these elasticities and interpreted as price markups over marginal costs. An upper bound for the price markup for AT&T is estimated to be 18.6% of price, which implies a potential deadweight loss of less than 1.26% of current long distance revenue. This is likely to overestimate the current deadweight loss because competition has subsequently increased.

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*The views expressed here are the author's and do not necessarily reflect those of the Federal Trade Commission or any individual commissioner. I would like thank Tim Daniel, Jan Pappalardo and Steve Parsons for comments and Dolly Howarth for research assistance.

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I. Introduction

Price regulation is desirable only when its benefits outweigh its costs. These benefits include the increase in consumer welfare and economic efficiency from reducing supra-competitive prices, while the costs include direct administration costs as well as reductions in productivity arising from disincentives directly caused by the regulation. For the telecommunications industry, there is growing evidence that regulation has led to substantial productivity losses (Mathios and Rogers (1989,1990), Kaestner and Kahn (1990), Olley and Pakes (1992), Crandall (1991), Kwoka (1993), Ying and Shin (1993)). While most experts agree that competition has increased in the long distance market, AT&T's prices are still regulated. The evidence on the extent of residual market power in the industry is still unclear. Some studies examining the structure (Egan and Waverman (1991)) and pricing behavior (Levin (1991)) of the long distance telecommunications industry conclude that competition already exists. Others interpret the structural evidence differently (Selwyn, Cornell, Taschdjian and Woodbury (1991)), or conclude that full implementation of fiber optic technology will render the industry a natural oligopoly that will support supra-competitive prices (Huber, Kellogg, and Thorne (1993)). This paper attempts to measure the degree of market power in the small business and residential market for long distance telecommunications by estimating the degree of substitutability between AT&T's and its rivals' service.

Before the 1984 divestiture, AT&T was thought to exert market power in two different ways. First, it was feared that AT&T-controlled monopolies in local telephone service would subsidize otherwise competitive long distance service, or that AT&T would discriminate against rival long distance carriers by providing inferior access to end users (Brennan (1987)). Second, it was feared that AT&T would wield market power in the long distance market directly by charging supra-competitive prices. The first threat did not materialize, as evidence strongly suggested that the subsidy flowed from the more competitive long distance markets to the regulated monopoly local service markets (Temin and Peters

(1985a, 1985b), Kaserman, Mayo and Flynn (1990), Shin (1993)). Nevertheless, AT&T's divesture of its local service operations in 1984 was explicitly designed to remedy the subsidy and discrimination complaints (Brennan (1987)). As a result, it would seem that if the long distance industry could be shown to be sufficiently competitive, there would be no compelling economic arguments for continued price regulation of AT&T's long distance service.

This paper measures the degree of competition in the long distance telecommunications market primarily through estimates of firm-specific demand elasticities. This demand elasticity indicates the extent of a firm's loss in quantity demanded due to unilaterally raising prices - that is, the extent of the firm's market power (Landes and Posner (1981)). The reciprocal of the own-price elasticity, the Lerner index, provides an estimate of the percentage price markup over marginal cost for an unconstrained, profit maximizing firm. The applicability of the Lerner index to AT&T is discussed below. Finally, estimates of this price-cost margin provide the basis for measuring the potential deadweight loss from supra-competitive pricing.

The paper's general conclusions are as follows. The estimate of AT&T's short-run own-price elasticity is -2.9, implying a short-run AT&T Lerner index of 0.337. Adjusting this index with an estimate of the bias due to the use of a short-run, rather than long-run, elasticity estimate implies that AT&T's price markup over long-run marginal cost is less than 18.6% of price. At this upper-bound value, the potential deadweight loss from supra-competitive pricing was less than 1.26% of total revenues for the 1988 to 1991 time period. Because the market likely has become even more competitive since the period analyzed in this study, this estimate is likely to overstate the current loss. For example, adjusting for AT&T's subsequent fall in market share decreases the upper-bound potential deadweight loss estimate to 0.71% of revenues. These estimates of deadweight loss are substantially less than estimates of the efficiency gains due to past deregulatory actions.

II. The Long Distance Telecommunications Market

The FCC's Specialized Common Carrier decision in 1971 opened up the long distance market to competition. AT&T's tough posture toward its new competitors led to many private antitrust lawsuits, and culminated in the Justice Department's massive antitrust suit. The 1982 settlement of this suit provided for the 1984 divestiture of AT&T's long distance operations from newly created regional local telephone companies. As part of the settlement, the divested local telephone companies were obligated to install switching equipment that allowed for "equal access" by any long distance company. This allowed AT&T's competitors to introduce services that were comparable to AT&T's. While AT&T's share of the long distance market's revenues in 1982 was 95%, by 1987 its market share had fallen to 80%, and it is currently about 60% (Kwoka (1993), Statistics of Communications Common Carriers (1992)). By 1991, MCI's and Sprint's revenue market shares had climbed to 17% and 10% respectively, and the two next largest firms, WilTel and Cable & Wireless, had market shares of somewhat less than 1% each. Since the divestiture, industry output, measured in the number of calling minutes, has nearly tripled. Even though AT&T's share has declined to 60%, its output has increased by two-thirds over 1984 levels.

A long distance company operates a communications network that connects local telephone exchanges (hence, it is often called an Interexchange Carrier, or "IXC"). A long distance company's network terminates in different local telephone companies' jurisdictions. The local telephone companies, such as the regional Bell Operating Companies and GTE, transport telephone calls between the customers' premises and the long distance network. These services are called "carrier access," and they currently represent nearly 40% of all long distance costs. Because these carrier access costs play an important role in the empirical analysis carried out below, it is worthwhile to describe them in some detail.

A. Carrier Access

Almost all carrier access rates are regulated by the FCC or state regulatory commissions. For standard toll service, long distance companies purchase "switched access" from local telephone companies. Switched access prices are divided into three main components: carrier common line, local switching, and local transport. Carrier common line charges are levied to cover that portion of the local telephone distribution plant assigned to the long distance companies for capital recovery. Local switching charges are levied because a long distance telephone call must be switched through the local network, thus tying up switching capacity that has alternative uses. Local transport charges are levied as a rental of the line between the long distance network and the relevant local switch. All three of these charges are levied per minute of use at each end of the telephone call using switched access.

The carrier common line charge is levied specifically to defray the costs of the local telephone distribution plant, and not the costs of completing long distance calls (hence, it is sometimes called the "non-traffic sensitive" charge), and has a long and tortured history. Half a century ago, the courts ruled that, because AT&T's long distance service used local exchange network loops, a portion of the cost of these local network loops should be recovered through long distance rates. The portion of the local loop assigned to long distance service steadily grew to 27% in 1982 with little relation to underlying economic costs.[1] The FCC's 1983 Access Charge Plan formalized this cost assignment as the carrier common line charge, which was to be levied as a per minute charge despite its fixed cost nature. At first, the non-AT&T long distance companies (collectively known as the Other Common Carriers or OCCs) had inferior connections to the local telephone companies (for example, customers were required to dial extra digits to reach the long distance company). This sort of access is called "non-premium access" and its associated carrier common line charge was set at 45% of the premium charge paid by AT&T. The FCC

[1]Originally the proportion of the local network loop costs assigned to long distance operations was the fraction of calls going over long distances. In the early 1950s, this was less than 3%, by 1982 it was 8.3% and in 1991 it was 14.4%.

has since required the local telephone companies to install equipment to provide equal access to any long distance company asking for it. Equal access equipment is now in place for nearly all (91%) long distance company customers, and non-premium service accounts for only 3% of OCC service. A subscriber common line charge of $3.50 per month for each residential line and $6.00 per month for each business line was phased in between 1985 and 1991; this new charge gradually replaced most of the carrier common line charge revenues. The reduction in the carrier common line charge, which has fallen to about one-sixth its 1984 level (total switched access prices fell about 60%), accounts for much of the price reductions in long distance service (Taylor (1991)).

Local switching and transport services are together called "traffic sensitive services" because their costs depend on the volume of traffic. For both of these services, there are many different rate elements that make the price dependent on various switching services and the distance of the transport. In general, however, the rates for these services have declined only slightly since divestiture. These rates are generally believed to be considerably above the services' marginal costs. Cost studies have put incremental costs (Mitchell (1990)) and long-run marginal costs (Shin (1993)) of switched access at one-tenth to one-third of the switched access rate.

Long distance companies also purchase a different form of carrier access, special access, from local telephone companies. Special access lines are not switched by the local telephone company and are leased by the month at rates corresponding to their capacity and distance. Actual usage is not metered. For a sufficient volume of traffic, special access can represent significant cost savings over switched access. Special access competes with third party, or facility bypass, access provision. Long distance companies use special access to connect directly to end users with high volumes of traffic or nonstandard technical requirements and to connect different long distance nodes within a metropolitan area as a substitute for the local transport portion of switched access.

Long distance company carrier access costs per minute differ due to differences in the mix of carrier access services that the companies purchase. First, different local telephone companies can have different prices, and the smaller, more rural local telephone companies tend to have higher prices. Long distance companies that carry a disproportionate share of the calls originating or terminating with these local telephone companies will tend to have higher carrier access costs. Second, the amount of local transport purchased for a typical call can differ across long distance companies. As a long distance company serves more urban customers, who tend to be closer to its local network connection, or adds more local network connections, its average local transport distance and corresponding charge per minute tend to fall. Third, switched access costs will depend on the amount of lower priced, non-premium access purchased by a long distance company; however, this cost difference is becoming negligible due to declines both in non-premium usage and the carrier common line charge.

B. Regulation of Telecommunications

States regulate prices for intrastate services (local services, intrastate carrier access and intrastate long distance), and the FCC regulates interstate services (interstate carrier access and interstate long distance). While the FCC regulates AT&T prices directly, the OCCs and the third party-access providers are not regulated directly, although the OCCs file prices with the state PUCs and the FCC similar to tariff filings of regulated firms.

Price-caps are increasingly replacing rate-of-return as the form of regulation in the telecommunications industry. Generally, price-cap regulation allows the regulated firm to charge any price below a regulated price-cap that is periodically adjusted to reflect changes in exogenous cost factors (Liston (1993)). The FCC decided to move to price-cap regulation for AT&T in May 1989. Federal price-cap regulation of local telephone companies' interstate access rates was implemented in January 1991. While price-cap regulation of local telephone companies has also been introduced by various